SHORT NOTES

DROSOPHYLLUM LUSITANICUM

by J. A. Mazrimas

The monotypic plant of the Droseraceae family, Drosophyllum lusitanicum, is a carnivorous plant that grows on the open, gravely hillsides of coastal Portugal, southern Spain and Morocco. These plants can be found growing in rocky acid soil along with heather (Erica umbellata), thyme (Thymus caespiticius), rockrose (Cistus sp.) and the Brooms (Genista sp.). For example, on a mountainside outside of the coastal town of Oporto, Portugal, the slopes are covered with loose irregular quartz-like stones scattered over the dry surface. When it rains, little of the water seeps through the hard-baked and dry surface but runs rapidly off the slopes into small arroyos. The hot, dry conditions during the day are frequently counteracted by the foggy, coastal mists during the cool nights thus affording Drosophyllum an opportunity to regain some of the life-giving moisture to its linear leaves.

The plant grows about a foot tall, with a woody stem and long fibrous roots that penetrate deeply into the crumbly soil. From the terminal end of the upright stem, narrow, linear leaves about six to eight inches long unfurl like fronds of a fern. One of the major differences that distinguishes Drosophyllum from Drosera are the stalked tantacles, which are immobile and trap small gnats on the sticky secretion of its tentacles. Another set of sessile glands then take over by secreting various enzymes when in contact with nitrogenous matter. By this means the plant obtains the nitrogen necessary for growth and seed production.

In the spring, the plant produces loose panicles of bright sulfur-yellow flowers about an inch across. Later in the season, the black pear-shaped seeds can readily be seen through the translucent cone-shaped seed pod. When the seed matures, the pod dries and splits open into a star-shaped structure exposing the seeds to dispersal by the coastal afternoon breezes.

Drosophyllum is usually started from seed which are lightly scratched over fine sandpaper and soaked overnight in water. They are sown the next day on a medium of 50% sphagnum moss - 50% perlite mix. In about two to four weeks over half the seeds will germinate during this period after which they are carefully removed and planted in individual five inch pots with the above mix. During this period of rapid growth, the seedlings should receive plenty of sunlight. Water should be added only when the growing medium shows a definite sign of dryness as the young plants are highly susceptible to damping off. When the stem achieves a semi-woody appearance, most of the problems with damping off have disappeared. Some precocious seedings will try to produce flower buds but these should be removed as they draw needed strength from the plant.

In the second season, the large plant with its numerous linear leaves densely covered with reddish glands, produces an abundance of the yellow flowers. Each flower can be self-pollinated followed several months later by the production of viable seed. The seeds can be sown immediately after ripening or stored in a cool, dry place up to a year. The plants should be grown individually in pots since there seems to be a mutual inhibition between plants when grown together. It is interesting that despite the abundance of seed, the plant never grows in dense patches in the field but prefers to remain scattered over a large area. After flowering and producing seed, the plant seems to languish and soon perishes. Although the literature records the plant as a perennial, I feel that more information should be

gathered on this aspect. At any rate, under horticultural conditions, it seems to be a biennial and new plants must be started from seed. Investigations in my greenhouse reveal that unlike Drosera, leaf cuttings are not adventitious. If a grower wishes to have plants on hand at all times, new seeds should be sown from the previous year's crop.

MONITORING SALT LEVELS IN BOG POTTING SOILS

by Warren Stoutamire

Bog orchids and carnivorous plants have been cultivated in the University of Akron greenhouses for 6 years with varying success. Soils suitable for most greenhouse plants are quickly lethal to the majority of bog plants and although there may be several reasons for this they all have one thing in common--a relatively high release rate of soluble salts. Soils in which pitcherplants and sundews flourish are low in such soluble compounds. Much of the bog plant material cultivated here is grown in mixtures of Sphagnum, brown peat, perlite, white silica sand and very small quanitities of topsoil, producing constantly low salt levels when properly watered.

A simple method of determining the quantity of dissolved salts in soils involves collecting the water draining from the pot after watering and determining its conductance in terms of micromhos (μMho) by means of a conductance meter. Conductance (Mho) is the reciprocal of resistance (Ohm) and $\mu\text{Mho} = 1/\text{Ohm} \times 10^6$. Such instruments vary in price, but tend to be expensive. Anyone with a knowledge of electronics should be able to put together a usable instrument for less than those commercially available. All utilize a simple electrode assembly which is placed in the solution to be tested, conductance being read through a bridge circuit. Because conductance readings vary with temperature they must be made at a standard temperature. Conductance determinations will give no information as to the kinds of salts present in solution but measure total ionized material. Los soil water conductance is associated with good carnivorous plant growth here and conductance measurements have been very useful both in spotting developing soil problems and in making up new potting mixes.

Examples of conductance determinations in different water sources (20°C):

		μMho
1.	Double distilled water	2
2.	Distilled water	3
3.	Mixtures in which Sarracenia, Drosera and Sphagnum mosses grow	20-40
4.	Fresh commercial greenhouse potting soil	230
5.	Akron tap water (120ppm total hardness)	250
6.	Soil in non-bog greenhouse ornamentals, showing toxic salt levels	1000-1500